

## CLAIMS:

1.           A metal halide burner with ceramic discharge vessel with  
- one discharge vessel for accommodating a filling (8) with two end parts (2a, 2b) each  
having one end opening (3a, 3b), - a filling (8), - a first and a second end closure  
construction (4a, 4b) having several components for closing said end openings (3a, 3b),  
5   and - a first and a second crevice (7a, 7b) between the end openings (3a, 3b) and the  
end closure constructions (4a, 4b), wherein - the first end closure construction (4a)  
differs from said second end closure construction (4b) in at least geometry, diameter,  
length, circumference, cross-sectional area, surface, volume, type of material of the  
components and/or arrangement of components; and/or - the geometry, diameter,  
10   length, circumference, cross-sectional area, surface, volume of said first crevice (7a)  
differs from the geometry, diameter, length, circumference, cross-sectional area,  
surface, volume of said second crevice (7b); and/or - the first end part (2a) differs from  
the second end part (2b) in geometry, diameter, length, circumference, cross-sectional  
area, surface, volume, type of material of one component, and/or the arrangement of  
15   components; - so that an asymmetric ceramic metal halide burner is achieved.
2.           The ceramic metal halide burner according to claim 1, wherein the  
crevices (7a, 7b), each having at least an unfilled portion and a filled portion differ in  
that - after the sealing process the volume of the unfilled portion of the first crevice (7a)  
20   leading to the discharge cavity is smaller than the volume of the corresponding unfilled  
portion of the second crevice (7b); and/or - the cross-sectional area of said unfilled  
portion of the first crevice (7a) is smaller than the corresponding cross-sectional area of  
the unfilled portion of the second crevice (7b); and/or - after the sealing process the  
length of the unfilled portion of the first crevice (7a) is shorter than the length of the  
25   corresponding unfilled portion of the second crevice (7b).

3. The ceramic metal halide burner according to one of the claims 1 or 2, wherein the sealants (6a, 6b) differ in that after the sealing process the position of the first sealant (6a) located inside the first crevice (7a) is arranged more closely to the first inner end opening of the first end opening (3a) compared with the position of the second sealant (6b) inside the second crevice (7b), preferably the distance between the first sealant (6a) and the first inner end opening is 0 mm to 2.5 mm, more preferably 0.5 mm to 2.0 mm, and most preferably 0.7 mm to 1.5 mm.

4. The ceramic metal halide burner according to one of the claims 1 to 3, wherein the sealants (6a, 6b) differ in that the first sealant (6a) is of a material selected from the group comprising metal or metal alloy and/or - the second sealant (6b) is of a material selected from the group comprising the material of a known sealing frit, a sealing frit with a higher content  $\text{Al}_2\text{O}_3$  powder than the known sealing frit,  $\text{Al}_2\text{O}_3$ - $\text{Dy}_2\text{O}_3$ - $\text{SiO}_2$ , and/or - the filling level of the first sealant (6a) after the sealing process inside the filled portion of the first crevice (7a) is larger than the filling level of the second sealant (6b) inside the filled portion of the second crevice (7b).

5. The ceramic metal halide burner according to claims 1 to 4, wherein, the feed throughs (5a, 5b) differ in that - the one of the feed throughs (5a, 5b) is constructed of more parts of components than the other one of the feed throughs (5a, 5b), preferably one of said feed throughs (5a, 5b) comprises at least two, more preferably three, and most preferably four parts of components; and/or - the largest cross-sectional area of one of the feed throughs (5a, 5b) is larger than the largest cross-sectional area of the other one of the feed throughs (5a, 5b), and/or - the rod and/or electrode length of one of the feed throughs (5a, 5b) is shorter than the rod and/or electrode length of the other one of the feed throughs (5a, 5b).

6. The ceramic metal halide burner according to claims 1 to 5, wherein said discharge vessel is constructed such, that the end parts (2a, 2b) differ in that - the length of one of the end parts (2a, 2b) is larger than the length of the other one of the end parts (2a, 2b) so that an asymmetric discharge vessel is obtained.

7. The ceramic metal halide burner according to claims 1 to 6, wherein at least one of the end parts (2a, 2b) and/or at least one of the feed throughs (5a, 5b) has a recess extending to the cavity-inside, whereby said recess is at least partly fill able with  
5 a corresponding sealant (6a, 6b).

8. The ceramic metal halide burner according to claims 1 to 7, wherein said burner is operation able with a power preferably being in the range from  $\geq 5$  W to  $\leq 250$  W, more preferably from  $\geq 8$  W to  $\leq 70$  W, and most preferably from  $\geq 10$  W  
10 to  $\leq 35$  W, and/or the burner is filled with a pressure inside the discharge vessel preferably being in the range from  $\geq 1$  bar to  $\leq 40$  bar, more preferably from  $\geq 5$  bar to  $\leq 30$  bar, and most preferably from  $\geq 8$  bar to  $\leq 25$  bar at room temperature.

9. Method of manufacturing a ceramic metal halide burner according to  
15 claims 1 to 8, whereby the manufacturing method comprises the steps: i) positioning at least one sealant (6a, 6b) into said discharge vessel, into a recess of at least one end part (2a, 2b), and/or into a recess of at least one feed through (5a, 5b), whereby each recess leads to the inside of said discharge vessel, ii) sintering said end parts (2a, 2b) to the discharge vessel, iii) closing said first end opening (3a) by sealing said first end  
20 closure construction (3a) to said first end part (2a), iv) filling said discharge vessel with an ionizable filling (8) through at least one end opening (3a, 3b), and v) closing said second end opening (3b) by arranging said second feed through (5b) in said second end opening (3b) and gas-tight connecting said second feed through (5b) to said second end part (2b) with a second sealant (6b), so that a gas tight ceramic metal halide burner is  
25 obtained.

10. Lamp, for lighting purposes, especially a head lamp and/or a lamp for the usage in one of the following applications: - shop lighting, - home lighting, - accent lighting, - spot lighting, - theater lighting, - consumer TV applications, - fiber-optics  
30 applications, and - projection systems, comprising at least one ceramic metal halide burner according to claims 1 to 9.